Health District After Dark: Public Health and Climate Change

Climate Change and Public Health:

Nursing’s Role

Professor Bernadette Longo, PhD, RN

Based on the presentation by Dr. Bernadette Longo, from the University of Nevada, Reno, this document will further explore and expand upon ideas raised in the presentation based on scholarly and other respected sources. Dr. Longo’s presentation provided several different ways that climate change can impact communities and how health professionals can play a role in addressing some of these issues.

**Natural Planetary Processes and Impact on Public Health**

Dr.Longo began her talk discussing how change is a natural and normal part of our planet ranging from bio-geochemical cycles and tectonic activities. Climate change, as created and impacted by human activity, such as that from greenhouse emissions has been in the forefront of activism and public policy discussions. Longo (2013) discusses the impact of natural forces, such as volcanic ash from a volcanic eruption, on a population’s health, not only from the initial eruption, but long after the event is “over.”. For example, health impact can depend on the size of particles, the interaction of the particles with lung tissue, the amount of toxic minerals in the ash, and the absorption of acidic gases into the ash all might contribute to a population’s health burden through cardiorespiratory and ocular issues.

Additionally, Longo (2021) discusses how lack of knowledge by health care professionals about “natural disaster” preparedness (such as earthquakes and tornados) can be problematic to ensure the publics’ physical and mental health in a disaster, as well as their own. Longo’s survey included 274 nursing students of whom only 43 percent felt prepared for an earthquake. A positive outcome of the study was that most of the study’s nursing subjects (77 percent) selected “drop, cover, and hold on” as the appropriate response for personal safety during an earthquake as well as having knowledge about proper wheelchair safety.

**Human Activities and Access to Clean Air, Water, and Food**

Besides natural forces impacting air quality, human activities such as automobile emissions, aerosol sprays, household activities such as cooking, vacuuming, dusting, and smoking of substances (such as cigarettes), can result in the addition of ultrafine particles (UFPs) into our air supply. Recent studies have explored the relationship between UFPs and blood pressure as well as blood markers of inflammation and coagulation.

**Interdisciplinary Efforts to Address Climate Change**

Many associate the science and advocacy of climate ideas with scientific fields such as environmental science, chemistry, and biology, yet many other disciplines have been contributing to our knowledge about the impact of climate change.. Dr. Longo mentioned in her presentation that nurses and other health professionals are part of interdisciplinary (or involving more than one academic, scientific or artistic disciplines) efforts to address climate change. Nurses and health care workers can help with epidemiology and surveillance activities, decentralizing health systems (health system goes to the public), working with high-risk patients involving income, abilities, and chronic conditions, teach workforce about living sustainably, access to quality food and air, and the “One Health” approach. According to the CDC (2018), the “One Health Basics” perspective sees human health, animal health (both wild and domesticated), plants and our shared environments as interrelated and interconnected. The goal of “One Health” is to address health issues at the intersection of “human-animal-micro-organism-environment” through the utilization of human, animal, and environmental health partners. As the CDC states, this perspective is not new and can be seen in theories. One example is the Gai Hypothesis as presented by Lovelock (1972) and Lovelock and Margulis (1974). The Gaia Hypothesis perceives the Earth and its biological systems as one entity twhose living organisms interact with the inorganic environment to create and maintain a self-regulating system. This sustains life such as the biosphere.

As the planet continues to evolve so does climate change (Adlong & Dietsch, 2013). Climate change has and will continue to effect health through extreme weather events, increased transmission of disease, infrastructure deterioration, and food and water shortages (Adlong & Dietsch, 2013). An interdisciplinary approach should be taken to mitigate the effects of climate change on health.

**Call for Nursing Education to Address Climate Change**

There has been a call for nursing education to incorporate the ecological planetary health model into its curriculum (Leffers, et al., 2017). The ecological planetary health model is based on multiple levels of nursing influence including individual, family, community, region/nation, international, and planetary/earth. Strategies for adaptation, mitigation (making less severe) , and resilience (recovery and or adjustment) are important in each level of influence. For example, nurses practice adaptation strategies through asthma management that is made worse from the impact of greenhouse gas emissions or severe weather events, such as wildfires (Leffers, et al., 2017).

Nurses are also called to advocate for mitigation options and influence policy recommendations. For example, nurses can educate and advocate for renewable energy and a move away from fossil fuel generation (Adlong & Dietsch, 2013).